UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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                                          :

MARSHAL ROSENBERG,   :   Civ. Action No. 1:18-CV-04830-AKH

                   Plaintiff,   :

                - against -   :   **AFFIDAVIT OF**

                                    :   **KRISTIN G. GARRIS**

METROPOLIS GROUP, INC., JOHN DOES 1- :
10, JANE DOES 1-10, AND XYZ COMPANIES :
1-10,   :

                  Defendants.   :

-- X

STATE OF NEW YORK   )
) ss.:
COUNTY OF NEW YORK)

KRISTIN G. GARRIS, being duly sworn, deposes and says:

     1.   I am a member of the Bar of the State of New York and an attorney at the law

firm Tannenbaum Halpern Syracuse & Hirschtritt LLP, attorneys for defendant Metropolis

Group, Inc. ("Metropolis") in the above-captioned action. I make this Affidavit in support of

Metropolis's Motion to Dismiss the Complaint herein and to place before the Court a

complete version of Exhibit D to the Complaint, which, as submitted by Plaintiff, did not

include Exhibit A thereto. I am fully familiar with the facts and circumstances stated herein.

     2.   A complete and accurate copy, including Exhibit A thereto, of the letter dated

December 13, 2017 that I sent to Robert deBrauwere, counsel for Plaintiff Marshal

Rosenberg, on December 13, 2017 is attached hereto as *Metropolis Exhibit A*. The version

of my said letter attached as Exhibit D to the Complaint omitted this Exhibit.

_____
Kristin G. Garris

Subscribed to and Sworn
before me this 27th day of
August, 2018.

_____
Notary Public

GLADYS PEREZ
Notary Public, State of New York
No. 01PE6372731
Qualified in New York County
Commission Expires 03/26/2022

Metropolis Exhibit A

**Tannenbaum Helpern
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December 13, 2017

VIA EMAIL AND U.S. MAIL

RdeBrauwere@pryorcashman.com

Mr. Robert J. deBrauwere
Pryor Cashman LLP
7 Times Square
New York, NY 10036

      Re: *Response to Second Letter to Metropolis Group, Inc.*

Dear Mr. DeBrauwere:

We write in response to your letter dated November 8, 2017 (the "November 8 Letter"), regarding Marshal Rosenberg's allegations against Metropolis Group, Inc. ("Metropolis").

We address below issues you raised in your November 8 Letter. In sum, Metropolis is using software created by another developer to support Metropolis's current business needs, and prior source code encrypted or password-protected by Mr. Rosenberg was inaccessible. Accordingly, the facts as we understand them today still do not appear to support Mr. Rosenberg's copyright and trade secret allegations.

    A.   January 1 – April 5, 2017

We thank you for sending to us a photocopy of the April 5, 2017 invoice (the "April 5 Invoice") from Mr. Rosenberg to Metropolis concerning two tasks, performed in March 2017, for which your client billed five hours of services. Based on the April 5 Invoice and email messages from Mr. Rosenberg to Metropolis, we understand that in 2017 Mr. Rosenberg's services included "fixing bugs" in the software and updating third-party programs such as Adobe. It is also our understanding that the April 5 Invoice is the last invoice that Mr. Rosenberg sent to Metropolis. Please let us know if this is incorrect, however.

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B. June 16, 2017

Given that the date of first publication stated on the 2017 Registration is June 16, 2017, but Mr. Rosenberg did not provide to Metropolis after April 5, 2017 any product or service of any significance that would even call for an invoice to be issued, it appeared to us that the subject of the 2017 Registration was not related to Metropolis. In your November 8 Letter, however, you clarified that "version 1.7.83" of Mr. Rosenberg's software is the subject of the 2017 Registration and "was in fact installed on Metropolis's systems." As noted above, we have seen no invoice issued by Mr. Rosenberg to Metropolis in June 2017 or later, but please let us know if one exists. In reviewing Mr. Rosenberg's email to Metropolis on June 16, 2017 that was attached in Enclosure B of the November 8 Letter, we see that the 1.7.83 version was, in Mr. Rosenberg's own words, simply "a bug fix at no charge" installed because an employee at Metropolis apparently received "multiple Error Messages." For ease of reference, we have copied below the email indicating Mr. Rosenberg himself viewed the "bug fix" as so minor that it was not even worth charging Metropolis for it:

Re: Metropolis Program Update #1 - 06/16/17 - Version 1.7.83

Fri, Jun 16, 2017 11:57 am

Marshal Rosenberg marshal_rosenberg@compuserve.com

To PennyL PennyL@metropolisny.com

Cc JannysR JannysR@metropolisny.com

This is a bug fix at no charge - not multiple Error Messages from Irene Hanna which occurred because a Cancelled Application with Charges attached was Deleted (should have been blocked).
Am in the process of restoring the Deleted Application to fix the problem.

Marshal

P.S. Did you submit my last Invoice to Frank (is way past due)

----Original Message----
From: Penny Laughlin <PennyL@metropolisny.com>
To: Marshal Rosenberg <marshal_rosenberg@compuserve.com>
Cc: Jannys Ramos <JannysR@metropolisny.com>
Sent: Fri, Jun 16, 2017 11:51 am
Subject: Re: Metropolis Program Update #1 - 06/16/17 - Version 1.7.83

Hi marshal
Hope all is well
Who asked for this update ?

Sent from my iPhone

Regards,

Penny Laughlin
Director of Project Managers
Metropolis Group, Inc.
22 Cortlandt Street, 10th Floor
New York, NY 10007
(T) 212.710.1215
pennyl@metropolisny.com
On Jun 16, 2017, at 11:48 AM, Marshal Rosenberg <marshal_rosenberg@compuserve.com> wrote:
The System has been Updated. Users Must Re-Login to Metropolis/Foxpro for changes to take effect.

Please Inform Staff

Fixes

1. Applications with Charges Attached may no longer be Deleted

Marshal

P.S. Am monitoring the situation with BIS being so slow and causing problems with automated E-Filing over the past week and a half. If no improvement soon, will alter the Automated E-Filing program.

■■■■

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Given this characterization of the new "version" as a "bug fix at no charge," we are unclear as to how such a minor change could contain enough original, copyrightable substance to be the subject of a copyright application and federal lawsuit.

C. No Access and No Decompilation Program

The developer who created new software for Metropolis reported to us that it could not and did not access any source code encrypted or password-protected by Mr. Rosenberg. In other words, Mr. Rosenberg's source code that was encrypted or behind a password-dependent barrier ("Walled-Off Code") was inaccessible. The developer also reported that it did not access or see any Walled-Off Code through a decompiler or decompilation program. In the November 8 Letter you stated: "That password protection prevented third parties, including Metropolis or its third-party developer, from accessing the Program's source code and remarks." It thus appears that Mr. Rosenberg's password protection was successful. The developer reported that it noticed certain source code was walled-off in this manner. After noticing that prior source code created for and at the direction of Metropolis was behind such password protection or encryption, the developer reported that it simply moved on with its commissioned work and wrote its own code to support Metropolis's business.

Copied below are portions of email messages between Metropolis and the developer. These communications are copied here to give you examples of communications during the software development process about multiple revisions the new program required in order to correct display issues and conform to Metropolis's requested formats and business needs:

> Now, I'm trying to cc and I'm searching for the contact person (Matthew DiGiorgi) but it's either taking too long or this feature is not properly working...
>
> I've spelled out the contact's full name as you can see highlighted, but why are these other names coming up? Shouldn't it be the specific person I'm asking for?
>
>
>
> In transmittal, I've decided to add a contact to my transmittal as CC but the internal error came back – but my cc name I chose never came up.

> I've decided to create a PW5 after hour and I'm drawing a blank here... why is the applicant name not showing directly from my job contact ?? like it does so under the applicant main ahv/work contact?

> I've decided to search for the person's name and again this is not working properly for me.

> The statement section 6 is still filling in the date, please remove this.

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> One of the items that pop out as issue immediately is the dashboard colors. It is very light and hard for the eye to focus.
>
> And the line between client and house # is confusing, can it be removed? It wasn't there before.
>
> Also on MY Alerts the date field is wrapping and it shouldn't.

- Need the contractor's registration/ tracking/ license # to appear on section 3 under the GC I've selected. Also need to remove the 'x' box for Electrician because I didn't choose that option – same goes to the 'other' N

> Okay now I've moved forward and crated a new project into the system – I've noticed that the program is not giving me an options to search for the 'Primary Contact'…. Maybe we should have a wheel to search for the contact from the program directly vs. typing the primary contact's name and it being incorrectly spelled/entered…

Again, we are providing these examples copied above so that you can see that the software was developed with ongoing instructions from Metropolis and that various modifications had to be made during the process. The code was not "copied" from Mr. Rosenberg's Walled-Off Code that Mr. Rosenberg himself rendered inaccessible.

We also wish to address the italicized statement in the November 8 Letter that our *"response strongly suggests that a third party developer has in fact developed a competing program based on Mr. Rosenberg's,"* as it is inaccurate. Nothing we wrote supports this accusation that Metropolis's new software was "based on" Mr. Rosenberg's old software. As explained above, Mr. Rosenberg apparently took steps to conceal his source code from everyone, including his client Metropolis who was to benefit from that code. Those concealment measures apparently worked. The source code was not accessible. Metropolis's new software was not "based on" Mr. Rosenberg's program. The new software created for Metropolis was based on the business needs and preferences of Metropolis, as well as standard forms such as those required by DOB / New York City. The Walled-Off Code for which Mr. Rosenberg employed encryption or password protection apparently stayed behind that encryption or password protection, as intended.

The word "competing" in the above-referenced italicized sentence may get at the heart of Mr. Rosenberg's allegations against Metropolis. It appears that Mr. Rosenberg is troubled by the fact that Metropolis decided to use another vendor to create up-to-date software for Metropolis. We are aware of no prohibition concerning Metropolis's ability to select and contract with other service providers. Your client may be disappointed that his product/service is no longer needed, and that Metropolis can survive using software created by a third party specifically for Metropolis, but using another developer to create new software is not a violation of Mr. Rosenberg's purported rights. The new software is not based on *Mr. Rosenberg's* Walled-Off

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Code that was rendered inaccessible by Mr. Rosenberg himself – it is based on *Metropolis's* business functions and business needs. Unfortunately, it appears that Mr. Rosenberg believes he is the only person in the world capable of creating software to support Metropolis's business. Another software developer can certainly work with Metropolis's staff, learn about Metropolis's business, review standard forms required by New York City, and assist Metropolis by creating software to address business functions and flow.

    D. No Access and No Trade Secret Violation

You stated in the November 8 Letter that "Mr. Rosenberg regards the source code for his software as a trade secret." We do not know whether Mr. Rosenberg's view of his source code as a trade secret is accurate, but, in any event, his characterization is not relevant here as the Walled-Off Code was not accessible.

You also stated in italicized font: "*Our concern is that Metropolis and/or a third-party developer accessed that source code in connection with the development of an infringing program and has since retained or even disseminated the coded which, as noted, constituted and reflected Mr. Rosenberg's trade secrets.*" Again, the developer reported that it noticed certain code was walled-off or hidden behind a password protection and/or encryption, and that such Walled-Off Code stayed behind that password protection and/or encryption. Mr. Rosenberg's barriers apparently worked as he desired: no one, not even the client for whom Mr. Rosenberg created the software, could access that Walled-Off Code. The developer therefore created new code to help Metropolis.

    E. "Visual FoxPro Remains Heavily Supported"

In footnote 1 of the November 8 Letter, you state that our reference to the fact that Microsoft no longer supports Visual FoxPro is confusing and "ignores the fact that Visual FoxPro remains heavily supported." In our Internet research, we found numerous postings regarding the FoxPro end-of-life and how it would affect businesses, Microsoft's lack of support after January 2010 in typical circumstances, Microsoft's total lack of support after January 2015 if a paid support extension plan had been purchased, and that only a few developers use the old software. For example, we reviewed the white paper posted at http://www.forteonline.com/ that was written "…to help management understand the impact, risks and options associated with the end-of-life of Microsoft Visual FoxPro to their business, products and staff." That paper includes the following language, among other statements:

> On **January 12, 2010**, mainstream support from Microsoft for VFP ended. Extended support from Microsoft is available, per policy, through **January 13, 2015** via the developer tools lifecycle support plan (*a paid support plan*). At the end of the Extended Support phase, discontinued Microsoft business and developer products are no longer publicly supported. This means that there is no more paid support, no support assistance, and no further security updates from Microsoft. Microsoft's

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> position on retired products states ***"Customers are highly encouraged to move a supported product as soon as possible."***
>
> Is VFP Going to Stop Working on 1/13/2015? No, the end of extended support does not mean the program will stop working on that date, only that support will no longer be available in any form from Microsoft. At that point, development teams are essentially "*on their own*" and without access to VFP's source code that is often critical to problem resolution with the VFP systems.

See Exhibit A (emphases original), a printout of the above-referenced white paper at http://www.forteonline.com/LinkClick.aspx?fileticket=WdFZ1mQMvVk%3d&tabid=72. This is just one example of material we found indicating that Microsoft's support of Visual FoxPro completely ended and few developers work with Visual FoxPro now given its age, lack of support, lack of security updates, etc. We do not understand your statement that "Visual FoxPro remains heavily supported" unless you are simply referring to the "support" Mr. Rosenberg provides in connection with old FoxPro-based software that he created and purports to maintain. The larger point, however, is that most businesses are moving forward and using up-to-date technology and software. Metropolis, for example, decided to have new software created for its business.

   F.   Litigation Hold Notice

You indicated in the November 8 Letter that you have no indication that our client has taken even a single step towards preservation. A detailed letter concerning Metropolis's obligation to preserve documents and materials that may relate to this dispute was of course sent to Metropolis. This is standard procedure, as you know. The letter covered ESI and the duty to preserve not only material in the possession, custody, or control of Metropolis, but also relevant employees, agents, or other non-parties who possess such materials.

<p align="center">*   *   *   *</p>

We still believe that your client's copyright and trade secret allegations are without merit and that he should drop this matter. Mr. Rosenberg apparently created password protections or other barriers that prevent anyone, including Metropolis, from accessing source code he created for Metropolis. We hope that your client can accept that a business like Metropolis should not be forced to use an outdated, unsupported product/service instead of newly-designed, up-to-date software. Perhaps Mr. Rosenberg will find comfort in knowing that his encryption or password protection worked as he intended.

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Given the first publication date cited on the 2017 Registration and the fact that the "bug fix" was so minor Mr. Rosenberg did not even charge for it, we still consider any infringement claim based on the 2017 Registration as frivolous. Should you nevertheless decide to attempt to seek judicial relief in connection with the 2017 Registration (still the only Marshal Rosenberg copyright registration we have seen) we request that you (1) notify me that such relief is being sought in sufficient advance so that we may participate on our client's behalf in any hearings or briefing, and (2) include a copy of this letter, with its attachment, to any motion, proposed order to show cause, or application for preliminary relief.

This letter is sent without prejudice to, limitation on, or waiver of any of our client's rights, remedies, and defenses.

Sincerely,

Kristin G. Garris

Enclosure

cc: Mr. Frank Fortino

EXHIBIT A

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When the project is worth doing...
do it right the first time!

Home

Latest from DarkReading

Forte's Glenn S. Phillips is a contributing writer for DarkReading.com, a sister site to InformationWeek, about compliance and security topics.

Compliance: The Surprising Gift Of Windows XP

The end of Windows XP will force organizations to properly reinvest in a modern and compliant desktop infrastructure that will be easier to maintain and secure.

Compliance Is Not Hard

Compliance requires a new set of healthy habits and the self-discipline to make those habits stick

Doomsday Prepping Your Business

Security and compliance are your guides to survival

You Are Not Over Budget -- You Underestimated

When forces align to underfund IT projects, they guarantee an ugly finish

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A personal tale of documentation failure

News

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Latest from Forte's NerdToEnglish.com

What is Your Snake?

Fear leads us to do illogical things. Sometimes there is no harm from this, but ignoring reality to focus on fear will do more harm than we realize.

The post What is Your Snake? appeared first on Nerd-to-English.

Perspective From a 3:23am Chipmunk

There is no way to explain to a scared chipmunk that I was not a threat. From his perspective I was eminent death, and that provides us all a lesson.

The post Perspective From a 3:23am Chipmunk appeared first on Nerd-to-English.

Conformity is the Modern Cowardice

We don't run away from a fight, we pretend there are no more fights, or that fights are for others. It is the modern cowardice.

The post Conformity is the Modern Cowardice appeared first on Nerd-to-English.

The Danger Of Gaming Your Message

The woman sounded so genuine and her boss could not wait to meet me

The post The Danger Of Gaming Your Message appeared first on Nerd-to-English.

Security Innovation Award

More news...

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Free Whitepaper!

The End-of-Life of Microsoft Visual FoxPro

A discussion, in plain English, to help management understand the impact, risks and options associated with the end-of-life of Microsoft Visual FoxPro to their business, products and staff.

Updated September 2013

Download White Paper

Statement on End-of-Life of Microsoft Visual FoxPro

Written by: Glenn S. Phillips, Sr. Consultant
Last Updated: March 2, 2012

SUMMARY

Microsoft® Visual FoxPro® is a discontinued product. This has (or will have) a significant impact on companies that invested in this technology. The degree and cost of that impact will vary by company and industry.

Companies that continue to use Visual FoxPro for mission critical programs should be making plans for retiring these systems. Those with major systems (i.e., systems with more than six man-months of effort) should begin making plans sooner than later to allow adequate time for redevelopment, testing and deployment.

PURPOSE

This document is meant to answer questions about the impact to businesses by Microsoft's retirement of Visual FoxPro (VFP).

AUDIENCE

This document is primarily to assist **non-technical management.** It is intended to help explain the business impact, risks, and options stemming from the retirement of Visual FoxPro.

This document can also help **technical staff** better understand the current status and future issues, and, in turn, plan better and explain the situation to non-technical management.

THE DETAILS

Please note that our team believes Visual FoxPro is a great tool and through the years we have built very powerful, secure programs with VFP.

However, the realities of Microsoft's actions mean the landscape for development changed and this MUST be understood by all businesses with investments in Visual FoxPro-based programs.

Forté Incorporated   **Statement on End-of-Life of Microsoft Visual FoxPro**

Final Release and Updates

In March 2007, Microsoft announced that there would be no VFP 10, thus <u>making Visual FoxPro 9 *(released to manufacturing on **December 17, 2004**)* the last commercial VFP release.</u>

The support of Version 9 continued with service packs and "hot fixes" that were released December 8, 2005, October 11, 2007, January 25, 2008, and April 3, 2009. No more updates are expected.

While the patches have adjusted a few features and added some compatibility for things such as Windows Vista, the <u>last major release of Visual FoxPro is over 7 years old, an eternity in the software world.</u>

Ending Support from Microsoft

O<u>n **January 12, 2010**, mainstream support from Microsoft for VFP ended.</u> Extended support from Microsoft is available, per policy, through **January 13, 2015** via the developer tools life-cycle support plan (*a paid support plan*).

At the end of the Extended Support phase, discontinued Microsoft business and developer products are no longer publicly supported. This means that there is <u>no more paid support, no support assistance, and no further security updates</u> from Microsoft.

Microsoft's position on retired products states ***"Customers are highly encouraged to move a supported product as soon as possible."***

Is VFP Going to Stop Working on 1/13/2015?

No, the end of extended support does not mean the program will stop working on that date, only that support will no longer be available in any form from Microsoft. At that point, development teams are essentially *"on their own"* and without access to VFP's source code that is often critical to problem resolution with the VFP systems.

Is There Something Wrong with VFP?

No, not from a feature standpoint and not from the capabilities the program provides for developing very professional, secure software programs. In many aspects, VFP remains one of the easiest and most robust tools for development of professional, data-centric programs.

The major contributing cause of the retirement of VFP is, in our opinion, that the Royalty-Free distribution, and lack of database licensing, gives VFP a poor (i.e. non-existent) on-going revenue model. The only real revenue for Microsoft from VFP was from sales of new versions, typically to just the developers.

When you couple this with the reluctance of the FoxPro Community to actually go out and buy new versions (VFP 6.0 is still the most widely used version of Visual FoxPro) it is not hard to see why Microsoft was not keen on tackling a major update or re-write of Visual FoxPro.

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By contrast, other Microsoft development tools such as .NET often require use of Microsoft SQL Server for data programs. Installation of these programs often requires a separate, paid license of MS-SQL Server for each location or server. This is a revenue generator for Microsoft not required with many VFP database systems.

We Have Important Programs Written in Visual FoxPro. Do We Need to Do Something Now?

It depends. Candidly, this is really **more of a business decision** and not just a technical decision.

It is most likely VFP programs will continue to work well for several years. But that is not guaranteed. Consider the impact to your business or customers if there are operational problems with your Visual FoxPro programs. Can your business operations function well if there are problems with your VFP-based programs?

All software (like computers, cars, buildings, telephones, etc.) has a life cycle. This includes programs developed in all other software development tools too.

For all businesses, it is important to understand the life cycle process and plan for it accordingly. Like the eventual cost from ignoring the maintenance cost or age of your automobile, the growing cost of maintaining an aging software system does not go away by ignoring it.

At the same time, maximizing the investment is also prudent. The goal is to plan appropriately so that you minimize risks while maximizing the investment. This approach, when done well, produces the best outcomes over time.

Keep in mind that at some point, sooner or later, required programs written in VFP will have to be rewritten or replaced. The more elaborate the system, the more time redevelopment will require to be completed correctly.

To avoid problems, replacement systems should be planned projects on a schedule that is based on anticipated needs and the importance of avoiding problems for your business.

What Major Problems for Business Does This Retirement Create?

To be very clear: For most businesses, this retirement by Microsoft does not create immediate problems. And in most instances, problems that do develop will be gradual and relatively easy to ignore and postpone resolution. But these assumptions are not a given and there are potentially serious risks for businesses.

1. Fewer Skilled Resources:

This is already a major problem. Smart, savvy software developers know that it is crucial to be skilled in current and marketable technologies. Therefore, the pool of all Visual

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FoxPro programmers has diminished drastically and will continue to diminish. The pool of the very best VFP programmers has diminished the fastest.

Except for new programmers hired and trained specifically for VFP projects, new developers will not understand this tool or will likely not be interested in learning it. Most programmers that remain available for VFP projects will be those that have chosen to not stay current with technology (and, thus, may not be the software developers you really want working on your critical programs).

Many companies with strong VFP teams have already had significant programmer departures (to either other internal non-VFP projects or to other companies). These are often the best and brightest of the development team, lured away not only by money but by professional opportunity.

Teams left with only weaker or less experienced VFP developers will struggle further as these remaining developers had likely over-performed when they could rely on the now absent expert VFP developers for assistance and coaching.

Just as none of us want to use a cell phone the size of a brick or work in office buildings without air conditioners (both common at one time), professional software developers want to work in current environments and stay up-to-date with the tools of their craft.

2. *Potential Abrupt Changes:*
    A fear of many VFP projects now is that at some point Microsoft will issue a Microsoft Windows security patch or other Microsoft Windows update that "breaks" some aspect of Visual FoxPro. Such an issue could disable the program (or some aspect of it) immediately.

    In other words, there is a potential that running important (and often required) Windows updates on servers or workstations could cripple important VFP programs immediately.

    In the short-term, it is possible (but not assured) that Microsoft might follow such an issue with a patch to VFP to resolve the issue. However, this patch may not be available promptly (and once past January 2015, may never be available).

    Keep in mind, there is no longer a Visual FoxPro team at Microsoft to respond to issues. In the past, that team would have been available to investigate and resolve issues promptly. That team has been dispersed to other projects and is likely unavailable to resolve future VFP issues that may arise except for the most serious of problems.

3. *New Security Requirements*
    In our opinion, one of the biggest dangers would come should new data security requirements come to an industry that VFP may be unable to meet. In other words, VFP works as designed but that is no longer sufficient.

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Technology changes faster and faster. So do security risks. In many industries, new rules and regulations are evolving related to security of information in database systems for customer information, financial data and medical records.

The combination of these factors makes it challenging to anticipate when a change may evolve that would impact the viability of any given VFP program. In such a case, the program may still work great but just fail to meet a new requirement for security, data-protection or technology integration.

In such a scenario, it is possible that the time-frame allowed for meeting the new requirement may be less than the time required to redevelop the program in other tools, such as .NET. This could result in fines and/or security risks. It would also create a costly project to address the issue, possibly even requiring a short-term project to meet a deadline, followed by a long-term project to redevelop the full program. A "crisis response" approach to development is usually the most costly and often VERY costly.

4. *Upcoming Versions of Windows*
   While Microsoft Windows 7 appears to work well with VFP programs, there is no assurance that future versions of Windows will do so. Window 8 is under development and is expected to be released in 2012.

   There are also suggestions that issues may develop with upcoming 64-bit programs and databases that interact with VFP programs and databases.
   (32-bit and 64-bit refer to many aspects of computers and software, but essentially, 64-bit systems have become the more common in the most recent years and are able to process more data and process data faster than 32-bit systems.)

   For example, the 2009 release of Microsoft Windows Server (Server 2008 R2) only works in 64-bit mode and most new computers running Windows 7 are running the 64-bit version of Windows 7. Thus VFP programs (which are 32-bit) will require compatibility mode to function and will no longer work natively. They are expected to work. They just won't be able to leverage the computing power available to other programs. This is a clear example that change is inevitable where VFP is involved.

   Note: Additional discussion of 32-bit versus 64-bit operation is continued later in this document.

Are There Any Other Potential Problems for Business This Retirement Creates?

1. *A Finite Life of Programs:*
   This issue is not as pressing as the problems above but will become so in time. Even though VFP programs may continue to function for years, there will eventually come a time that the cost and effort of maintaining a system based on retired software tools using the few remaining developers will no longer be cost effective or practical.

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This is <u>not an issue unique to VFP</u>, but to all programs and programming tools. The retirement of VFP just makes this issue more obvious.

Just as there are still COBOL programs written in the 1960s that are still running today, there will be VFP programs running for many more years. As with COBOL, however, the cost of maintaining legacy VFP systems will be increased by the need of the systems to interact with newer technology.

The retirement of VFP means that there will be no VFP updates to take advantage of upcoming technology developments or meet possible future security requirements. However, if managed correctly, this will be a great time to leverage the power and security of new software and database tools.

2. *Perception:*

Perception is reality for many people and businesses. This is a problem now for VFP and will only grow in the coming years.

<u>For VFP programs used only in-house</u>, perception will likely only be an issue for companies wanting to hire (or keep) bright and forward-thinking developers, the very developers that would likely avoid accepting employment where much of the work is with retired tools they see as obsolete.

<u>For firms that sell or distribute VFP programs</u> this may create a problem of the software appearing to be dated and, by implication, obsolete. This will, of course, vary by industry and customer.

If a firm promotes the availability of the program's source code (the code the programmer writes) with a commercial product developed in VFP, the retirement means source code availability will change from an asset to a liability for the program (see "Fewer Skilled Resources" above) since developers are still needed to understand and modify the source code.

<u>Please Note:</u> Even if a customer's CEO or other management (or your management) does not care what tool the software is built with, that management will still likely ask for input from the technology staff or a consultant. The technology staff or consultant will likely recommend that the company consider more current technology than tools built with VFP (a tool that has not had a major update in over 7 years and will not be updated again).

Can We Just Convert Our Programs to .NET?

No. While .NET is now Microsoft's software programming platform of choice, there are no pure conversions to convert FoxPro code to .NET (or any other development tool).

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Microsoft introduced a number of features to create subsystems with .NET components that can be read from FoxPro but this only provides the means for VFP programs to interact with .NET programs, not convert from one to the other.

Most major development platforms have very unique structures and systems. Even when a company claims they have tools to convert from one development platform to another (such as VFP to .NET, or C to Visual Basic) such conversion rarely works well and often creates a bloated and buggy program.

Redevelopment is the means for creating a stable program in current technology. This can also, if managed well, be a great opportunity to properly implement design changes and improvements.

Is VFP's Data Handling and Integration Capability Going to Go Away or Be Reduced?

No, VFP will continue to work handling data and interacting with its own databases and generally with other databases (such as Microsoft SQL Server) as it has before. However, problems interacting with other databases have already begun to appear.

Possible future data access limitations may come from changes in future version of external databases, such as SQL Server.

As more 64-bit programs and database systems are released, it is very likely new problems will surface regarding their interaction with VFP applications and databases, which remain 32-bit.

Technical Aside (i.e., some nerd-speak for technical readers) -Some new technical data access challenges that have already developed are:

1. *The Visual FoxPro ODBC driver was last updated around VFP6 SP3. It was included in MDAC 2.5 and earlier and preinstalled on Windows 2000 and earlier. In order to use it on Windows XP and later Windows versions, it has to be installed first since it no longer comes installed by default.*

2. *The VFP ODBC Driver can be installed under 64-bit Windows but 64-bit applications cannot access the VFP ODBC driver because it comes only in 32-bit version. For 32-bit applications under 64-bit Windows a different ODBC tool must be installed and used and in many (perhaps all?) cases, systems that must interoperate with VFP must remain 32-bit.*

Note: Additional discussion of 32-bit versus 64-bit operation is continued later in this document.

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Will We Still Be Able to Create and Distribute Royalty Free .EXE Data-Based Programs?

Yes, this capability will remain available and functional. This is one of the strong cost advantages of VFP over many other database systems and development platforms.

Are There Plans for Visual FoxPro to Support 64-bit Versions of the Windows Operating System?

No. While Visual FoxPro will remain 32-bit and not natively use 64-bit addressing, it will run in 32-bit compatibility mode. This is important because Microsoft is moving aggressively to make 64-bit Windows the standard. The lack of 64-bit VFP means that VFP will not be able to leverage the processing power available to other 64-bit programs and may potentially have issues interacting with 64-bit programs.

> *Technical Aside - 32-bit Compatibility Mode in 64-bit MS-Windows is not the same thing as the "Windows XP Mode" (which is really a separate instance of Windows XP running in a virtual computer).*
>
> *Programs operating in the 32-bit compatibility mode work in the same environment as the 64-bit programs. Windows just automatically adds a "translation layer" to shift program code back and forth "on the fly" to 64-bit code for the processor.*
>
> *This ongoing translation can impact performance as the translation must occur for all code and data the operating system passes on behalf of the program to/from the processor.*
>
> *You can install and run your VFP programs in Windows XP Mode was well but the programs would be isolated from other programs running on your computer. If the VFP program needed to interact with other programs, such as MS-Word, installed in your 64-bit environment, this approach would not work.*

Is Retirement of Software Tools Normal?

Yes, it may not be a frequent event but retirement is normal and expected of all tools as technology and markets change. COBOL, FORTRAN, BASIC, dBASE, and host of other software languages had "their day" and then retired, at least from mainstream development.

Sometimes an aspect of a language will surface in a new tool but it is not a continuation of the tool. For instance, VB.NET borrows keywords and syntax from Visual BASIC but is a very different tool requiring a major learning curve for even Visual BASIC programmers.

FoxPro has had an incredible lifespan but its roots are now 28 years old. Based on dBase, it began as FoxBase in 1984 and was purchased by Microsoft in 1992. The "Visual FoxPro" version was first released in 1995, with subsequent major releases in 1997, 2000, 2002, 2003 and 2004.

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As Often Requested by the Remaining VFP Development Community, Will Microsoft to Release VFP as Open Source?

There is no reason to believe Microsoft will ever release the VFP code publicly and a variety of logical business reason why they would not realistically consider such a move.

VFP algorithms are used in other important Microsoft products and are considered important intellectual property by Microsoft. Furthermore, releasing VFP as open source would likely create completion for other Microsoft products. These two issues alone are a strong disincentive for releasing the code as open source.

What if I Have More Questions?

There are a number of resources available on the Internet related to VFP and new software development platforms (although the number of VFP-related resource is dwindling).

You should also feel free contact this document's author, Glenn S. Phillips at **Forté Incorporated** (**www.ForteOnline.com**, **(205) 985-1111**) to ask questions or to discuss how this change by Microsoft may impact your business and how to plan for success in the future.

Conclusion

Although retired as a product by Microsoft, Visual FoxPro is still a very powerful, functional tool for developing professional software. As time passes, however, the viability of this tool will degrade and businesses should be prepared in advance with a plan for the future.

About the Author

Glenn S. Phillips works with business leaders to leverage technology and to address hidden risks within.

Glenn and his team do this through assessments, consulting, custom software design and development.

He is the president of Forte' Incorporated, and has been recognized for technical innovation and business leadership by a number of organizations, including Microsoft, Dell, Harvard University, Auburn University and various media outlets.

A regular guest speaker and source for national media, he is also the author of the book *Nerd-to-English: Your Everyday Guide to Translating Your Business, Your Messages, and Yourself*. The book, as well as the website **NerdToEnglish.com**, focuses on bridging the often hidden communication gaps that put businesses, careers and relationships at risk.

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Forté Incorporated provides advisory services to business management as well as design and development services for custom software and data systems. Among the numerous awards for innovation, the firm has been awarded as Microsoft Partner of the Year for Data Management Systems.

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